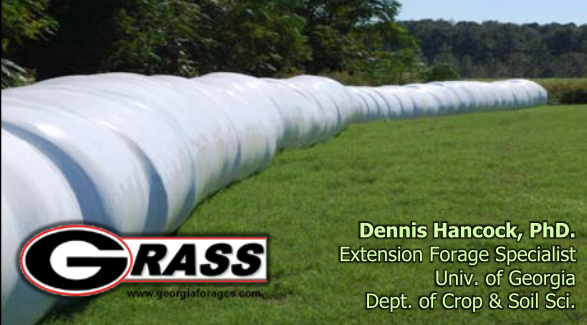


Cattlemen's Forage Conference

Making, Storing, and Feeding Round Bale Silage



Making, Storing, and Feeding Round Bale Silage



GRASS
www.georgiaforages.com

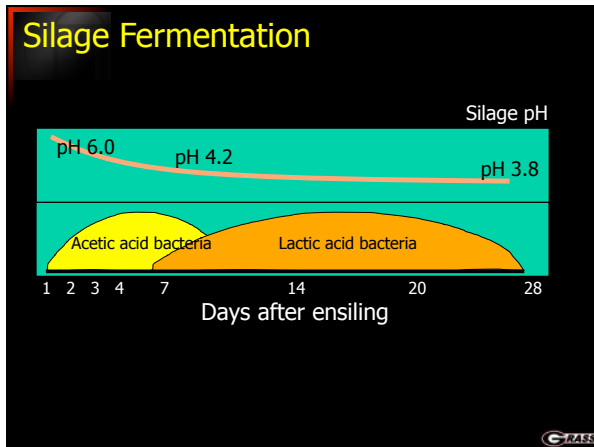
Dennis Hancock, PhD.
Extension Forage Specialist
Univ. of Georgia
Dept. of Crop & Soil Sci.

Silage & Baleage

SILAGE - Forage that has undergone anaerobic fermentation

Less dependent on weather

Makes use of some forages that other-wise wouldn't work.


Baled Silage

Can be more efficient...

Fewer Losses Accumulate With Each Step

End Result:
90% of Original DM

- Wilting: 2-5% loss
- Baling: 2-5% loss
- Storage: 4-10% loss
- Feeding: Minimal loss




Dr. Dennis Hancock,
Extension Forage Specialist

Quality Advantages

- Enables timely harvest
- Lowered risk of rain damage
- Less shatter loss
- Higher forage quality¹
 - Lower NDF, ADF, ADL
 - Higher CP
 - Increased digestibility
 - Increased palatability
- However, "Garbage in = Garbage out!"

¹ Han, et al. 2005; Hancock and Collins, 2006.



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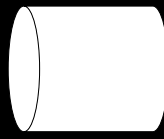


Baled Silage – An Option for Harvesting High Quality

Treatment	CP	TDN	RFQ	ADG
	%	%		(lbs/hd/d)
Bermuda Hay	16.1 a	62.9 b	116 c	1.56 b
Ryegrass Baleage	16.3 a	65.9 a	174 a	1.94 a
Ryegrass Hay	14.7 b	62.4 c	133 b	1.26 b
LSD _{0.10}	0.22	0.35	3.2	0.341

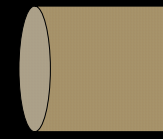
Bale Comparisons

Baleage Bale:
5 ft wide x 4.5 ft tall



60% Moisture
Total weight = 2125 lbs.

Hay Bale:
5 ft wide x 4.5 ft tall



15% Moisture
Total weight = 1000 lbs.


**Same Density
Same Dry Weight**

850 lbs



Key 1: Cut down no more than you can handle.

- Lay down an appropriate amount of forage for wilting, baling and wrapping.
 - Cut mid-afternoon on one day, bale & wrap the next day.
- Amount cut = how much can be baled and wrapped on same day.
- Bales should be wrapped w/in 12 hrs of baling.



Key 2: Choose the right bale wrapper.

Consider:
Cost, Labor, Speed, Volume



Wrapper Costs

Wrapper Styles

- 3 point hitch (\$3,000 - \$14,000)
- individual (\$5,000 - \$18,000)
- in-line (\$13,000 - \$24,000)



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Baled Silage Costs



Plastic Cost:
\$6.00 - \$8.00/ton DM

Wrapper cost:
\$2.00 - \$5.00/ton DM

Fuel & Repairs:
\$0.50 - \$5.00/ton DM


Labor:
\$0.75 - \$2.00/ton DM



The Unseen Cost of Hay Storage

	Expected Losses	Cost of Production (\$/ton)			
		\$80	\$100	\$120	\$140
		Value of Losses in the System (\$/ton)			
Hay, no cover/on ground	50%	\$40	\$50	\$60	\$70
Hay, under roof	25%	\$20	\$25	\$30	\$35
Baleage	15%	\$12	\$15	\$18	\$21

3: Explore your options.



Own for Own Use

Own & Custom on the Side


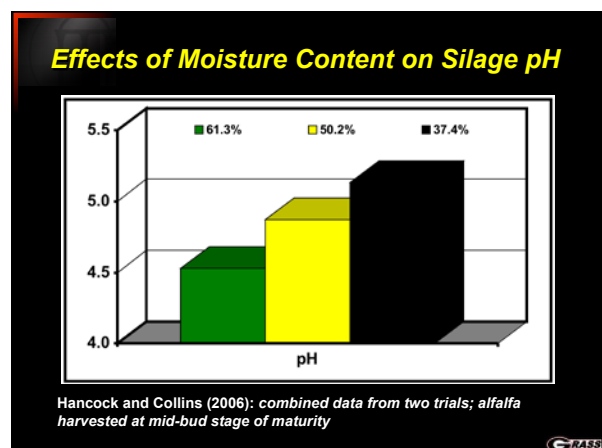
Custom Hire

4. Bale at the right range of moisture

Ideal Range, 50-65% Moisture

Toxic Potential (Clostridial, Listeriosis) **70%** ← **Moisture** → **40%** Poor Fermentation

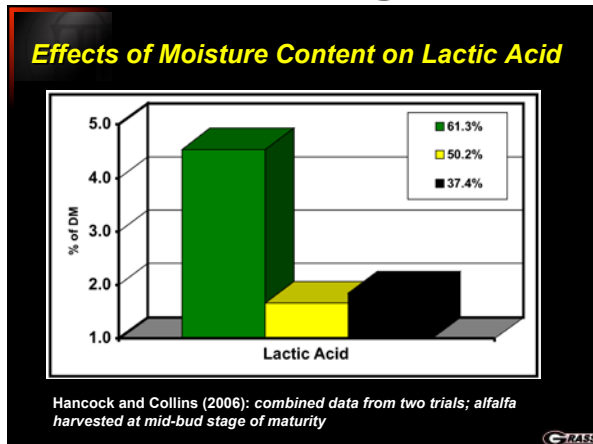
Rule of thumb:
bale when the forage is no longer wet enough to wring juice out of a handful.

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5. Make good bales

- **Maximize bale size**
 - match to tractor
 - dense bales
 - 4'x 5' bale is most popular
 - > 9-1300 lbs, depending on %M
 - square edges
- **Use plastic twine or net**
 - sisal twine degrades plastic

6. Choose an appropriate site for wrapping

- Where feed out is easy
- Good sod and no stobs
- Wrap at the storage site
 - reduces handling
 - reduces risk of spoilage

7. Apply enough plastic but no more.

Application Amount – Inline Wrapper

- Six-Eight layers (+ double on joints)
 - 12.5 – 16.7% overlap
 - two rolls rotating around bales
- Pre-stretched to 50-70%
- Tacky side towards the bale
- 60-80+ bales per hour

Application Amount – Ind. Wrapper

- Four layers (2 + 2 system)
 - 50% overlap
 - two full bale rotations
- 15-40 bales per hour

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Alfalfa silage & hay
2, 4, or 6 layers of film

Storage Treatment	Consumption	
2 layers	53%	
4 layers		84%
6 layers	88%	
Hay	44%	



8. Feed it in an appropriate way.

- Match quality to animals needing that quality
- Use a ring (or cone) feeder
- OK for mixed rations
 - Bale grinder
 - May need to be sliced

9. Feed the bales within 9 months.

- Bales will squat and be difficult to handle.
- Plastic will deteriorate over time.
- Bales will begin to spoil.

10. Have a plan for handling the plastic.

- Recycling is not currently an option
- Reduce the bulk to aid in handling

Resources

Baled Silage: Frequently Asked Questions
Dr. Dennis Hancock, Forage Extension Specialist

Some Points on Feeding Baled Silage
Dennis W. Hancock, Extension Forage Specialist, The University of Georgia

Silage makes an excellent feed for ruminant animals. However, feeding silage is much different than feeding hay. Silage, because it is much wetter than hay, is much more susceptible to deterioration. Sealed from oxygen during storage, the forage undergoes fermentation. However, when it is once again exposed to air when

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Baling Forage Crops for Silage
James C. Henning, Michael Collins, David Ditch, and Gerry D. Lucifora

Dr. Dennis Hancock,
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